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Wasatch

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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project

Date

Author

TITLE

ANNUAL INSECT CONTROL AND INFESTATION REPORT

WASATCH NATIONAL FOREST

1943

By

Bruce V. Groves, Assistant Forester

Salt Lake City Utah

October 12, 1943

SUBJECT-

INDEX No.-

208 Forestry Bldg., C.S.C.
Fort Collins, Colorado
November 6, 1943

Mr. W. L. Robb, Asst. Regional Forester
Forest Service Building
Ogden, Utah

Dear Mr. Robb:

The copy of your memorandum of October 25, S-CONTROL, Wasatch, Insects, to the Forest Supervisor has been received.

Your interpretation of my comments on Mr. Grove's survey report and recommendations are correct. I was elated over the results on the Fish Creek unit because the infestation did not increase and get out of hand as we feared it might during the present manpower shortage. As you state, we should not be too complacent about the outcome of the infestation. That is why a fall survey is recommended for 1944. The Fish Creek infestation is somewhat analogous to a smoldering fire--the chances are good that it will go out on its own accord but the safest thing to do is jump in and put it out when it is small and eliminate the possibility of spread. About all that we can do now is to hope that the infestation does not get above the present level before the labor situation improves.

The advisability of control work in Spring Canyon depends upon the nature of the infestation. Mr. Grove's survey report shows that there are 680 trees on 4,680 acres. Unless these trees, or a majority of them, are concentrated in certain areas, control would not be advisable.

Very sincerely yours,

N. D. WYGANT, Entomologist.

Ogden, Utah
October 25, 1943.

S
CONTROL - Wasatch
Insect

To: Forest Supervisor
From: W. L. Robb, A.R.F.
Subject: Insect Control Surveys Report

Reference is made to your insect control survey report and to Dr. Wygant's comments of October 19, copy of which is attached.

We would agree with Mr. Groves' recommendation that the Fish Creek unit should be treated but that the labor situation prevents it. Generally speaking, such is the policy - wherever an epidemic situation appears the cheapest practice as to costs and damage done is to hit it hard and at the earliest possible date. We have found that a half-hearted attempt based on reduction of population gets us nowhere. And if the labor situation had not prevented it Rock Creek, Fish Creek, and any other infestations on the Wasatch would have been cleaned up before this.

However, if we can obtain no labor all we can do is to watch the situation and hope it does not get too bad before we can resume work.

We expect that Dr. Wygant's statement that once an epidemic goes over the top its downward trend continues is true. However, it has been our experience the downward trend does not continue indefinitely. Most of the work done recently on the Wasatch and Ashley was on areas treated between 1932 and 1937. Control plus natural downward trend continued for several years but finally the infestation flared up and we were caught badly off balance. We find too, that on the Powell and Dixie, though the general trend might be downward, some units flare up though the general average is low and that as happened on the Dixie a build-up calling for action can occur in a single dry season. Our point is that we should not become too complacent because of Dr. Wygant's statements, as we are sure he does not feel that way. You will note he again recommends fall surveys.

We wonder if it wouldn't be good policy if you cannot obtain next spring a crew large enough to clean up the Fish Creek unit but can obtain some labor, to clean up the hot spots at Echo Lake and do what you can on Spring Canyon. Why take a loss there year after year if we can prevent it? Of course, if the labor cannot be obtained nothing can be done. However, we feel it advisable to clearly differentiate between what should be done and what can be done with the labor available.

Logging, we have found, by removal of high risk trees eventually removes the hazard. However, until operations are concluded there can be heavy losses and any tree killed is a direct loss in stumpage. The direct benefits of small scale operations is slight as illustrated by the operations along the Soapstone utility road which were of little help in our work on the Iron Mine unit. We do not believe, therefore, we should expect too much from the operation in Spring Canyon.

W. - ROBB

Enclosure.

cc.  Dr. Wygant

THOMAS
GOSWORTHY - ASSISTANT
2

RECEIVED 22nd JAN^Y
OFFICE 2077

208 Forestry Bldg., C.S.C.
Fort Collins, Colorado
October 20, 1943

To: Dr. F. C. Craighead, In Charge, Forest Insect Investigations
From: N. D. Wygant, Entomologist, Fort Collins, Colorado
Subject: Annual Insect Survey, Wasatch National Forest

Enclosed are one copy of Mr. Grove's survey report on the Wasatch and two copies of my comments. Two copies of my comments have been sent to Timber Management Division, R-4.

The manner in which the insect control and surveys have been conducted on the Wasatch is very gratifying. It is a good demonstration of the effectiveness of control work when properly managed. Credit for the good management goes to Messrs. Robb and Miles of the Regional Office and Mr. Groves of the Wasatch who has been directly in charge of the work in the field. Too often the work is managed by men who have had little experience, little enthusiasm, or by men who do not have time to properly manage the field work because of other duties. Poor work results and often infestations are overlooked until they are out of hand and as a result the value of control work is discredited.

Supervisor Koziol raised the question of the justification of control work in the Fish Creek and Rock Creek units during the present emergency because they are in or adjacent to the High Uintas Primitive areas which is closed to logging. Justification is more difficult than in working circles where logging is going on, but it seems to me that insect control should be considered as part of the protection plans. Most of the timber in the primitive area is overmature and will die from one cause or another before the present primitive area agreement expires.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Administration
Bureau of Entomology and Plant Quarantine

Forest Insect Laboratory
208 Forestry Bldg., C.S.C.
Fort Collins, Colorado
October 19, 1943

Memorandum on Annual Insect Control and Infestation Report,
Wasatch National Forest by Bruce V. Groves, October 12, 1943

Copies of Mr. Groves' memorandum of October 12, S, CONTROL-Wasatch, Insect (Annual Survey and Infestation Report) to the Forest Supervisor have been received. Mr. Groves has prepared an excellent report, analyzing the insect situation very clearly. I am in agreement with his results and recommendations and have little to add except some comments.

As Mr. Groves states "the downward trend of the infestation noted last year has continued and the picture of the present Wasatch infestation is brighter than at any time since its inception." The survey results bring out the effective results of efficient control work in past years. The downward trend of the infestation in the Fish Creek and Rock Creek units, where little or no control work has been possible, somewhat changes the urgency of control work in these units. The principal reason for recommending control work in the Fish Creek unit in past years was to prevent the spread of the infestation into the better quality timber in the Granddaddy Lakes area. The survey shows that little spread has taken place in the last two seasons. The timber in the heavily infested area is small in size on steep slopes, and is of rather poor quality. It is puzzling to understand why the infestation has not spread into adjacent areas where the trees are larger and supposedly more susceptible to insect attack.

Because the trees are small, the situation based on the estimated number of infested trees appears to be worse than is actually the case. The amount of brood^{that} develops in the smaller trees is much less than that which develops in the larger trees such as those treated on the Iron Mine unit. Past history of epidemics has indicated that once the peak has been reached and the epidemic is declining, the downward trend continues. In view of the present manpower shortage and the downward trend of the infestation it seems advisable to not attempt control work this fall or next spring, unless the labor situation unexpectedly changes before the

end of the control season. The Fish Creek and Rock Creek units should be surveyed again next fall to guard against a flare-up.

Submitted by

N. D. Wycant

N. D. WYCANT, Entomologist

cc: 2 Dr. Craighead
2 R-4

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASATCH NATIONAL FOREST



ADDRESS REPLY TO
FOREST SUPERVISOR
AND REFER TO

SALT LAKE CITY, UTAH

S
CONTROL - Wasatch
Insect

October 12, 1943

Dr. N. D. Wygant, Entomologist
Bureau of Entomology and Plant Quarantine
203 Forestry Building, C.S.C.
Fort Collins, Colorado

Dear Dr. Wygant:

Attached are two copies of our insect control survey report, as requested.

We have no prospects as yet of being able to do any control work this fall but hope that the labor situation will become better by spring.

Very sincerely yours,

F. C. KOZIOL, Forest Supervisor

By

Bruce J. Groves

Acting

Enclosures - 2

S

CONTROL - Wasatch

Insect

(Annual Survey and Infestation Report)

Salt Lake City, Utah
October 12, 1943

To: Forest Supervisor

From: Bruce V. Groves, Assistant Forester

Subject: Annual Insect Control and Infestation Report

The 1943 insect control survey was characterized by its limited coverage of the Wasatch lodgepole pine stands to determine the extent and intensity of the current bark beetle (*Dendroctonus monticola*) infestation. Only 24,292 acres were intensively surveyed this year, as compared with 131,556 acres cruised in 1941. However, it is believed that the more heavily infested areas were selected for survey through the combined advance reconnaissance by the writer, Dr. Wygant of the Bureau of Entomology and Clark Miles of the Regional Office.

All survey strip was run by two men between September 16 and October 6, with minor interruptions caused by fire suppression activities and time spent in vain efforts to hire men to replace two experienced surveyors who were unable to accompany the survey because of last minute conditions. The writer was assisted in the survey by an 18 year old boy and by a cook-packer during the trip into the primitive area. Some acreage was left unsurveyed due to this lack of manpower but all areas were covered that extensive reconnaissance had indicated to be necessary.

The Iron Mine, Broadhead-Haystack and Mirror Lake units were surveyed from Soapstone Guard Station headquarters. Granddaddy Lakes, Fish Creek and Rock Creek units were worked out of a pack camp established at Rainbow Lake and later moved to the head of Rock Creek. The Squaw Basin camp was eliminated this year to save time, although this necessitated quite long trips by horseback to lower Rock Creek baseline stations. Most of the back country survey was accompanied by stormy weather and wet travel conditions but this caused no lost time.

While at the Rainbow Lake camp site the survey party was visited and assisted for a few days by Dr. Wygant. Results of his inspection will probably be forthcoming shortly.

Methods

The one-man line plot method, described and commented upon in last year's survey report, was again used. Practically all strips were run from previously established baseline stations which continued to prove their value as time

savers by eliminating the necessity of new section corner ties and offsets.

All areas were surveyed on a $2\frac{1}{2}$ percent basis, $1/4$ acre plots being taken at $2\frac{1}{2}$ chain intervals, using 40 chain offsets.

Costs

The approximate cost of the survey follows:

Salaries and wages	\$450.00
Transportation:	
Automobile.	25.00
Horse hire.	31.00
Horse feed.	20.00
F. O. Travel and Expense	10.00
Subsistence.	<u>55.00</u>
TOTAL.	\$591.00

Results and Recommendations

Despite the fact that a greatly reduced amount of control work was completed during the past year, the downward trend of the infestation noted last year has continued and the picture of the present Wasatch infestation is brighter than at any time since its inception. The estimated total infestation on this year's surveyed area is 8,194 trees as compared with the 1940 peak year's 45,666. This downward trend is indicated in the following table and holds true in most of the units (infestation in excess of .10 trees per acre denotes epidemic conditions):

<u>Unit Name</u>	<u>Estimated</u>	<u>New Attacks per Acre</u>		
	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>
Fish Creek	.70	1.09	*1.0	.58
Rock Creek	1.57	1.46	.91	.75
Broadhead-Waystack	.33	.19	.17	.14
Mirror Lake	.28	.07	.13	.12
Iron Mine	2.4	1.6	.12	.05
Granddaddy Lakes	.02	.02	.04	.05

*Estimate based on actual spotting on part of area.

Units that have been treated of course show the sharpest decline. A more optimistic picture of this reduction is obtained when it is recalled that several other large and previously badly infested units are not included because they have been cleaned up and have stayed clean to the extent that further survey was not considered necessary.

The character of this year's attacks was generally normal, there being few of the "holdover" trees that have caused some concern during the last two seasons' surveys. Also, there seemed to be fewer of the "doubtful" attacks, probable pitchouts, etc., that made survey work difficult. Because of their small importance this year the numbers of these types of attacks have not been

classified separately. The attacks were generally heavy and successful even when only on one side of the tree. There was a lower percentage of strip attacks noted, however. The brood was usually in the small larvae to half-grown larvae stage, though many of the galleries examined seemed to have fewer than the usual number of larval mine developments indicating either less egg production or development.

Unit results and recommendations follow:

Fish Creek

A total of 2,640 trees are estimated on an area of 4,536 acres or .58 trees per acre. While this is a larger estimate than was indicated by last year's survey, indications are that there has actually been a decrease on this unit. Spotting on a portion of the area during control in the winter of 1942 shows that the per acre infestation was 1.0 and the $2\frac{1}{2}$ percent survey strip run on the unspotted area showed as heavy infestation as that on the area which was covered by 100 percent survey. Therefore, it can be concluded that the estimate of the 1942 survey was quite low for the unit, probably due to the large number of blind attacks which had not been previously encountered by the surveyors that year.

Trees on the unit are small and heavily attacked. Heaviest infestation is found near the ridge tops. The area is steep and rocky and broken up by almost impassable rock cliffs and slide rock. Work at any time except during dry weather is very hazardous due to this difficulty in daily travel to and from the heavily infested area at the higher elevations. The only practical camp site on the area is about seven miles from the end of the road on Rock Creek.

The unit should be treated this fall but to date labor conditions have prevented the start of a project. Road and trail conditions during fall and winter are better than in the spring and the desirability of using the deck and burn method instead of the "ortho" treatment on this isolated area also emphasizes that a fall project is preferable than one in the spring when burning conditions are dangerous. However, since work this fall is probably impossible, plans to complete the job next spring should be made dependent upon a labor supply. The labor situation has definitely worsened since last winter when a project on this unit failed despite strenuous efforts to keep an established camp supplied with laborers.

A job on any project in this isolated area is definitely not desirable to individual laborers when compared with other available temporary work. It is doubtful if labor from the ordinary sources will be available in necessary quantity for the duration. In view of this situation we are very fortunate that the trend of the infestation is downward.

Rock Creek Unit

The number of infested trees on this unit now totals 5,762, the estimate being reduced from an estimated .91 trees per acre last year to .75. This area remains the heaviest and largest infestation on the forest but has a lower priority for treating because it is ~~likely~~ likely to spread to other units. It too should be treated as soon as the labor situation permits assurance of first completing the Fish Creek unit.

The timber, topography, general location and character of the infestation is very similar to that described for the Fish Creek unit.

Broadhead-Haystack Unit

Only 4,680 acres of area were surveyed on this unit this year. Remaining portions had been eliminated from consideration by advance reconnaissance. While this surveyed area has a mildly epidemic condition, the scattered nature of the infestation and downward trend make it inadvisable to recommend control work. The trees on the area are quite large, overmature and subject to insect attacks. The timber access road now under construction should allow much of this large timber to be utilized and should help prevent further flare-up of the epidemic.

An estimated 680 trees or .14 trees per acre are on the surveyed area, slightly less than the .17 trees per acre on the same part of the unit last year.

Mirror Lake Unit

Only 960 acres of this unit in the vicinity of Echo Lake were surveyed. Little change in this infestation was noted from last year and 120 trees are estimated on this part of the unit. Visible red tops on other portions of the unit are reduced in number as compared with those in previous years.

Iron Mine Unit

The 1942 survey, after complete treatment of this unit (13,439 trees treated), showed an estimated 368 new attacks on 7,236 acres. During the spring of 1943 864 trees were treated on about 2,500 acres that justified further cleanup measures. No further cleanup is now required according to this year's survey of the entire unit. Only .05 trees per acre remain on the area for a total estimate of 320 scattered trees. It is hoped that continued, and if possible, increased utilization will reduce the overmature timber in this very susceptible stand before another insect epidemic is started. Further reconnaissance and survey will no doubt be desirable next year.

Granddaddy Lakes

This large stand of decadent timber remains surprisingly free from insect activities, especially in view of the fact that much of it

lies next to the Fish Creek epidemic. Only this adjacent area was surveyed and little change was found in the number of new attacks. Careful examination of all red tops on the plots revealed that the majority were due to suppression or normal causes and not influenced by bark beetles.

General

Considerable reconnaissance of the Blackfork units has revealed no sign of flare-ups since the large 1941 projects. A few new attacks have been noted along the flat on the lower east fork of Blackfork in the small patches of mature type that remain there, but control measures in this scattered type are not justified unless it builds up or spreads into surrounding large reproduction. This should be checked upon next season.

Corral Creek, Hades and Squaw Basin units were not surveyed due to the shortage of labor for the survey and to their low priority. It is probable that the first two units harbor an infestation similar to that estimated last year. Should it become possible to do more treating than is necessary to complete Fish Creek and Rock Creek units, Hades and Corral Creek should be examined for further consideration.

Summary

Attached is a table summarizing the survey results and giving recommendations with cost estimates.

Last year's cost estimates have been raised by 20 percent due to increased prices already in effect for horse hire and feed, travel, subsistence and wages.

Respectfully submitted,

Bruce V. Groves

BRUCE V. GROVES
Assistant Forester

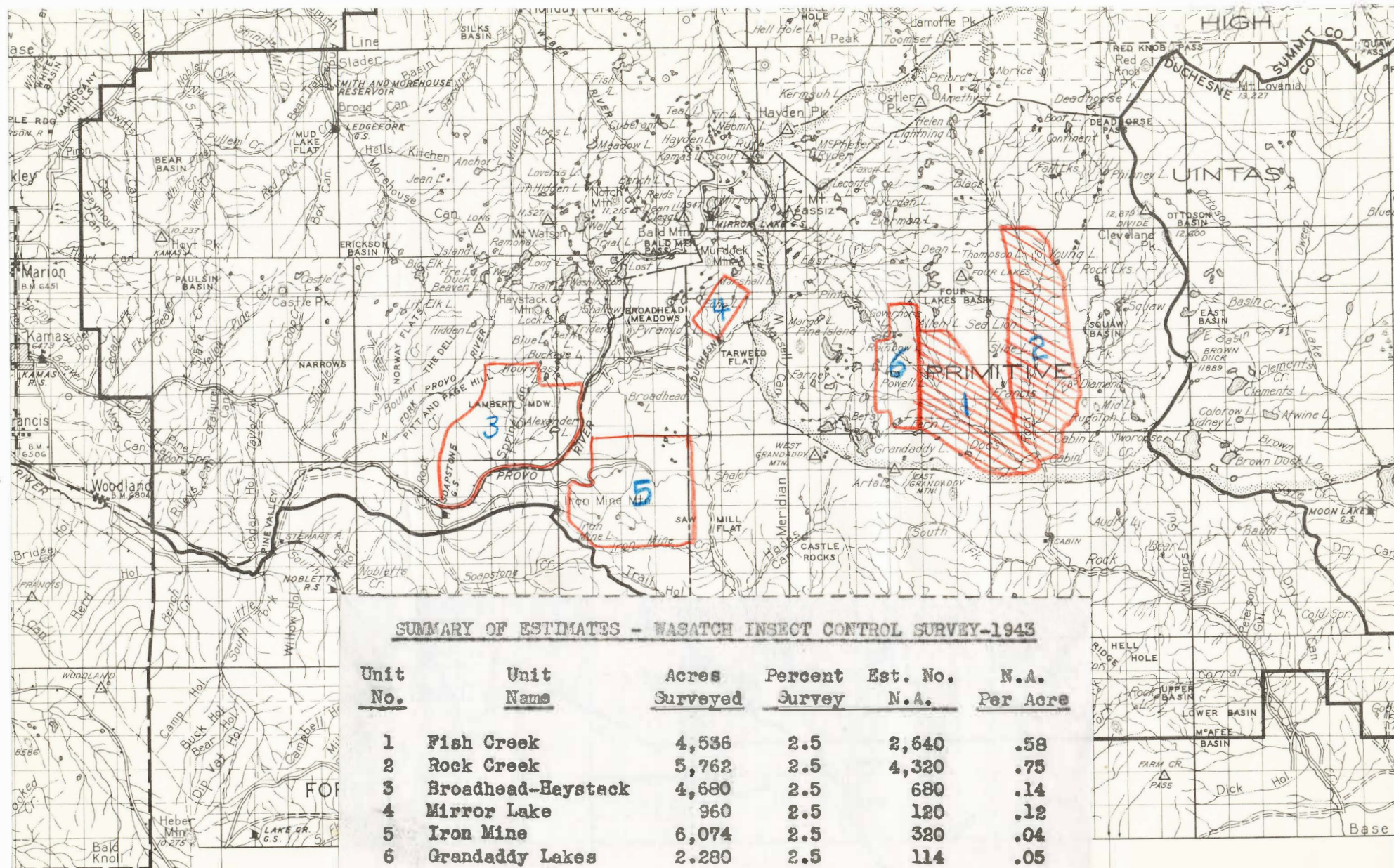
Approved

10-13-43

H. C. Kozl
Forest Supervisor

SUMMARY OF ESTIMATES - WASATCH INSECT CONTROL SURVEY - 1943

<u>Unit No.</u>	<u>Unit Name</u>	<u>Acres Surveyed</u>	<u>Percent Survey</u>	<u>Est. No. N.A.</u>	<u>N.A. Per Acre</u>	<u>Recommended Control Time and Method</u>	<u>Est. Cost Per Tree</u>	<u>Est. Cost Per Unit</u>
1	Fish Creek	4,536	2.5	2,640	.58	Spring-Deck & Burn Ortho	\$5.40	\$14,250
2	Rock Creek	5,762	2.5	4,320	.75	Spring-Deck & Burn Ortho	5.40	31,000
3.	Broadhead-Haystack	4,680	2.5	680	.14	None		
4	Mirror Lake	960	2.5	120	.12	None		
5	Iron Mine	6,074	2.5	320	.05	None		
6	Granddaddy Lakes	2,230	2.5	114	.05	None		
	<i>Total</i>	<i>24,202</i>		<i>8,194</i>				



SUMMARY OF ESTIMATES - WASATCH INSECT CONTROL SURVEY-1943

Unit No.	Unit Name	Acres Surveyed	Percent Survey	Est. No. N.A.	N.A. Per Acre
1	Fish Creek	4,536	2.5	2,640	.58
2	Rock Creek	5,762	2.5	4,320	.75
3	Broadhead-Haystack	4,680	2.5	680	.14
4	Mirror Lake	960	2.5	120	.12
5	Iron Mine	6,074	2.5	320	.04
6	Granddaddy Lakes	2,280	2.5	114	.05

R.6.E.

SALT LAKE MERIDIAN

UINTA SPECIAL MERIDIAN
R.11.W.

R.10.W.

R.9.W.

R.8.W.

R.7.W.

R.6.W.

Area Recommended For Treatment